

NAIL-GUIDING GROOVES OF THE NAIL CARTRIDGE OF A NAILING GUN

BACHGROUND OF THE INVENTION

5 1. Field of the Invention

This invention relates a nailing gun, particularly to one having its nail cartridge provided inside with a plurality of reinforced nail-guiding grooves able to guide a nail row to shift smoothly and prevent nails from
10 being deadlocked.

2. Description of the Prior Art

There are various operating modes for loading a nail row 20 in the nail cartridge 10 of a conventional nailing gun 1, as shown in Fig. 1. Generally. The nail
15 box 10 of a conventional nailing gun is made of aluminum squeezed in shape or engineering plastic and formed inside with a plurality of nail-guiding grooves 11 of different widths for loading different-sized a nail row 20, which will be guided by the nail-guiding groove 11 to
20 move upward to a nail-striking base to be driven into an object.

A common nail row 20 has its front edge formed with a plurality of sharp nail points and its rear edge formed with a plurality of serrated nail heads 21, which
25 are positioned in and able to slide along the nail-guiding groove 11 of the nail cartridge 10, as shown in Fig. 2. During nail striking, the uppermost nail 22 of the nail

row 20 is disengaged from the nail row 20 and driven into an object, and the nail row 20 is also affected to vibrate deflecting by a striking force on its upper end. Meanwhile, the allowance formed between the nail row
5 20 and the nail-guiding groove 11 will deflect slightly and the serrated nail heads 21 of the rowed nail 20 will closely push against the inner wall of the nail-guiding groove 11. Under the circumstances, when one round of nail striking is finished and the nail row 20 is moved
10 upward to supply nails, the wall edge of the nail-guiding groove 11, especially the corners 111 of its upper edge, will be abraded by the nail heads 11 of the nail row 20. Thus, after the nail cartridge 10 has been used for a period of time, the opposite wall corners 111 of the
15 nail-guiding groove 11 may be respectively abraded into a notch 112, rendering the nail row 20 unable to slide smoothly during shifting upward action of supply nails, as shown in Fig. 3.

Moreover, in case the gap between the two notches
20 112 respectively formed at the opposite wall corners 111 of the nail-guiding groove 11 is wider than the nail head 21 of the nail row 20, the nail head 21 is liable to be stuck immovable in the gap of the two notches 112 and the nail cartridge 10 becomes unable to supply nails any
25 more. In addition, no nail cartridge 10 is sold alone on the market for the present. Therefore once the nail cartridge 10 gets out of order, the entire nailing gun will

become useless, resulting in a great loss to consumers.

SUMMARY OF THE INVENTION

The objective of the invention is to offer the structure of nail-guiding grooves of the nail cartridge of a nailing gun, respectively having a combining groove
5 formed integral at one side on which the nail heads of a rowed nail rest. The combining groove is fixed inside with an abrasion-resisting plate of high strength and high wear resistance. Thus, during nail striking, the nail
10 heads of the nail row can rest against the abrasion-resisting plate so as to prevent the wall corners of the nail-guiding groove from being worn out, preventing nails from being deadlocked, enabling the nail row to shift smoothly and prolonging service life of
15 the nail cartridge.

BRIEF DESCRIPTION OF DRAWINGS

This invention will be better understood by referring to the accompanying drawings, wherein:

Fig. 1 is a perspective view of a conventional
20 nailing gun:

Fig. 2 is a partial side cross-sectional view of the nail box and the rowed nail of the conventional nailing gun:

Fig. 3 is side cross-sectional view of the
25 conventional nail-guiding grooves in a worn-out condition:

Fig. 4 is a partial perspective view of the nail

cartridge of a nailing gun in the present invention:

Fig. 5 is a partial side cross-sectional view of the nail cartridge and the nail row of the nailing gun in the present invention:

5 Fig. 6 is a side cross-sectional view of the combining grooves and the abrasion-resisting plates combined together with the nail-guiding groove in the present invention: and

10 Fig. 7 is a side cross-sectional view of the abrasion-resisting plate installed at one side of the nail-guiding groove in the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the nail-guiding
15 grooves of the nail cartridge of a nailing gun in the present invention, as shown in Figs. 4 and 5, includes a nail cartridge 30 made of aluminum pressed into shape and formed inside with a plurality of symmetrical and parallel nail-guiding grooves 31 for receiving a nail row
20 40. Each nail-guiding groove 31 has the opposite edges of its one wall, on which the nail heads 41 of the nail row 40 rest, respectively formed integral with a combining groove 311 fixed inside with an
25 abrasion-resisting plate 312 (a steel plate of high strength and high wear resistance used in this embodiment). The width of the combining groove 311 (or the abrasion-resisting plate 312) is about two thirds of

the thickness of the wall between two adjacent nail-guiding grooves 31. Thus, when one round of nail striking is finished and the nail row 40 is moved upward to supply nails, the nail heads 41 of the nail row 40 can
5 rest against the abrasion-resisting plate 312 and shift thereon to prevent the opposite wall corners of the nail-guiding groove 31 from being worn out by the nail heads 41 of the nail row 40 and enable the nail row 40 to move upward smoothly to supply nails. Besides, the
10 nail-guiding groove 31 can always maintain a constant gap so the nail heads 41 can be avoided deadlocked when the nail row 40 is moved upward to supply nails.

Further, as shown in Fig. 6, the combining groove 311 of the nail-guiding groove 31 in this invention has
15 one side wall or two side walls respectively and laterally provided with a V-shaped or round-shaped positioning rib 3111 at a preset height, and the abrasion-resisting plate 312 has one side edge or two side edges respectively provided with a positioning groove 3121
20 matching with and having the same shape as the positioning rib 3111. Thus, the abrasion-resisting plate 312 can be laterally fixed with the combining groove 311 so as to reinforce their combination.

Furthermore, as shown in Fig. 7, the combining
25 groove 311 of the nail-guiding groove 31 in this invention can only be provided at one side of the nail-guiding groove 31, on which the nail heads 41 of the

nail row 40 rest, equally able to avoid nails being
deadlocked. Substantially, the gap 32 between the nail
42 of the nail row 40 and the nail cartridge 30 is only
about 0.3 mm wide, therefore the nail head 41 of the nail
5 row 40 can shift right and left only within a very small
extent. Under this condition, even if an
abrasion-resisting plate 312 is only disposed at one side
of the nail-guiding groove 31, the nail heads 41 of the
nail row 40 can still always rest against and shift along
10 the abrasion-resisting plate 312 with no possibility of
being deadlocked, even though the other portion of the
same side of the nail-guiding groove 31 is provided with
no abrasion-resisting plate.

While the preferred embodiment of the invention
15 has been described above, it will be recognized and
understood that various modifications may be made
therein and the appended claims are intended to cover all
such modifications that may fall within the spirit and
scope of the invention.

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